

*The Enemy's defensive belts had left a seam in indirect fire weapons systems coverage. Blue Diamond recognized and exploited this seam to get across the Tigris quickly with minimal casualties.*

Blue Diamond modified the attack plan to take advantage of the opportunity. RCT-1, attacking up the Highway 7 corridor, would telegraph the Coalition's intent to move up the expected avenue of approach from An Nasiriyah to Al Kut. This would reinforce the Baghdad Division's predisposition to defend Al Kut to the south, effectively fixing this Division in place (The Baghdad Division was also prepared to defend against an expected Coalition advance up Highway 6 from the east.) By attacking this division by fires, it would drive the Iraqis to return fire with their own indirect fire systems, opening them up to detection by 11<sup>th</sup> Marines Counter-Battery Radar, and subsequent destruction by 3d MAW. While this occurred, RCT-5 would continue the attack up the unfinished Highway 1 to the limits of the Division's battlespace in order to pose a threat to Baghdad from the south. This would aid the main effort by forcing the Iraqis to commit forces to defend against the Marines' advance, making these troops unavailable to defend further west where the main American attack would come. The Iraqis were not expecting a major advance up the unfinished highway, and had made no discernible preparations for its defense. The attack from this unexpectedly large force would have the effect of fixing the Medina RG Armored Division should it try to mass against the US V Corps. LAR would reinforce this deception by continuing to press north along Highway 1 beyond the point where the rest of the Division would turn to move against the Baghdad RG Infantry Division and cross the Tigris River. RCT-5 would make the turn to the northeast on

Highway 27, and secure crossing sites over the Tigris. RCT-7 would then pass through RCT-5 and also 'run the seam' between the indirect fire fans of the Iraqi defensive belts. Resupply would be conducted near the Hantush airfield once it was opened for use by 3<sup>d</sup> MAW. Once across the River, RCT-7 would be in position to turn the Al Kut defenses to the west, and destroy the Baghdad RG Division. The Division would rapidly mass its combat power along Highway 6 and be in a position to drive-on to Baghdad.

Command and Control (C2) of the Division presented the planners with a different set of challenges. With two RCTs moving rapidly up Highway 1, and a third RCT moving along the Highway 7 axis, there was concern in some quarters that the Division would not be able to maintain C2 of all three RCTs over extended operating distances as far as 100 km. The G-6 conducted extensive



terrain studies and developed a detailed plan for retransmission sites for all Division priority 1 radio nets

*While still in Kuwait, Division communications Marines work with a variety of newly fielded systems, including the SMART-T.*

(Intelligence, Fires, and Maneuver.) This analysis ensured that the reach of the Division's line-of-sight communication capabilities was maximized. The Division also supplemented these nets by utilizing HF Radio, UHF Tactical Satellite radios, SMART-Ts, Blue Force Trackers, and Iridium satellite telephones to maintain communications with the RCT CPs moving up the two routes. After doing the 'impossible' for so long that it had become routine, the Division communicators set themselves to the task of laying out the C2 architecture that would allow the Division to keep on its pace to Baghdad. Approximately one month later, these communicators would have to deal with the wrath of Mother Nature as well, as they successfully implemented the plan on the battlefield.

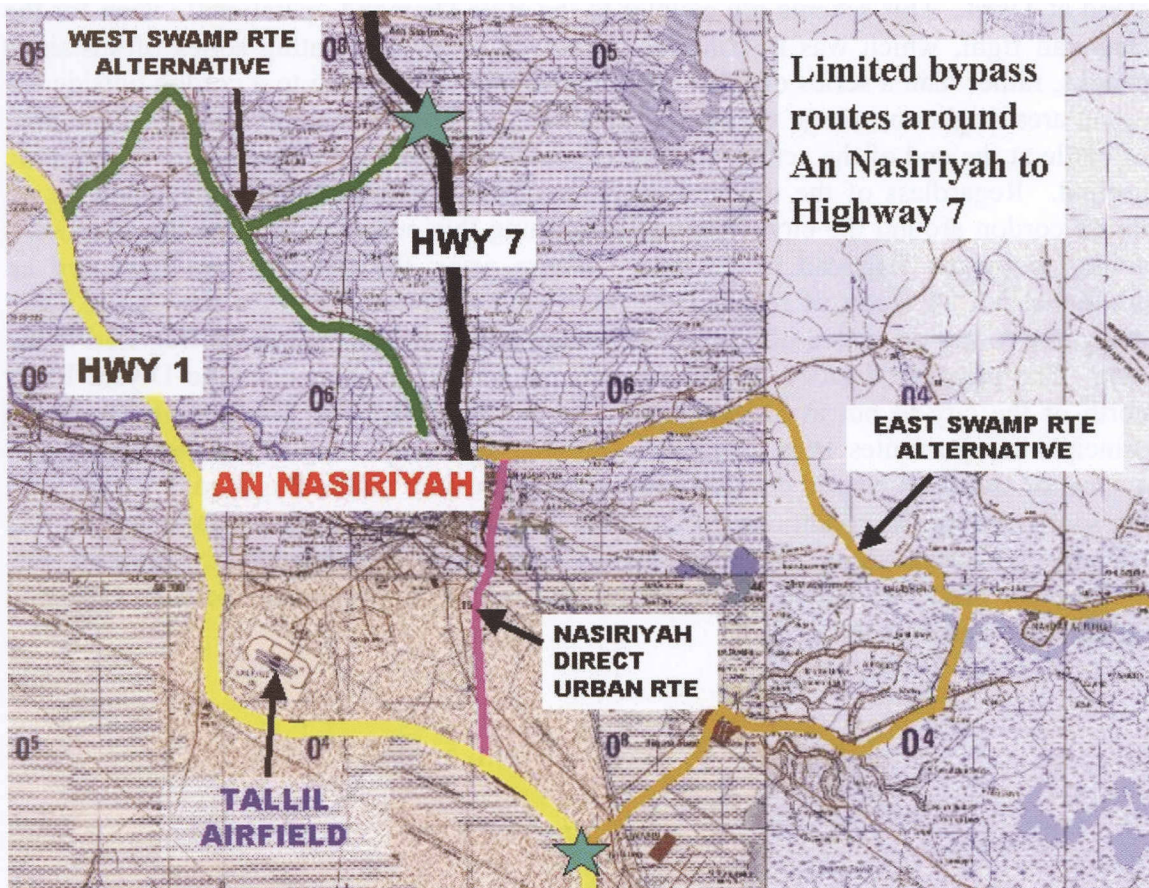
### **Operational Planning Update – The Eastern An Nasiriyah Bridges**

Using both the Highway 1 and Highway 7 corridors north of the Euphrates was possible, but the chokepoint at the single Highway 1 bridge site west of An Nasiriyah would seriously impede the Division's tempo. The forces bunched on the approaches to this 'hourglass' chokepoint would also be a tempting target for the enemy's employment of chemical weapons. On the north side of the Euphrates, natural factors conspired against any cross-corridor movement. There were no connecting routes between Highway 1 and Highway 7 until the Division had maneuvered all the way to Ad Diwaniyah, 150 km to the north. There, Highway 17 connected the two major avenues of approach, including a critical bridge over the Saddam Canal, which flowed between the



two highways. Additionally, there would be additional friction and congestion generated if the Division conducted a major Forward Passage Of Lines (FPOL) near the An Nasiriyah area, a cost to speed that the Division was not willing to pay. To rely exclusively on the Highway 1 bridge for the entire Division's maneuver would be a gamble.

An exhaustive search had found no suitable routes over the Euphrates to the east of An Nasiriyah. The Division planners revisited the earlier work that had been done on the bridges in An Nasiriyah itself, and found that the easternmost bridges in the city offered a direct avenue of approach across the Euphrates River and Saddam Canal, and directly onto the Highway 7 corridor. Geographically, this was an obvious choice and General Conway agreed. If the Division could secure these bridges intact, and the urban environment permitted, this was a preferred route for the attack force using Highway 7. As the Division understood the intent of the US Army's 3<sup>d</sup> Infantry Division at the time, the Army would clear the An Nasiriyah urban area south of the Euphrates in their defeat of the Iraqi 11<sup>th</sup> Infantry Division and their seizure of the western Highway 1 bridge. If this occurred, the enemy in An Nasiriyah would likely be subdued enough to allow Division combat forces to pass over the eastern bridges in the city. The Division G-6 worked with the MEF G-6 to ensure that the frequencies, nets, and call signs of the US 3<sup>d</sup>



*The swampy ground along the Euphrates on either side of An Nasiriyah left little room for maneuver. The most direct route would be along the eastern edge of the urban area, but this would entail greater risk.*

Infantry Division were pre-planned in order to conduct detailed coordination on the ground. A decision point and decision criteria were inserted into the Division plan to allow for rapid exploitation of the eastern bridges if circumstances allowed. If the securing of the city was delayed, the decision could be made based on the level of risk. Task Force Tarawa, a MEB-sized force with a full headquarters staff, under General Richard Natonski, was given the mission of securing the crossings in An Nasiriyah and stabilizing the urban area. The Division would carefully coordinate its passage through An Nasiriyah with this force.

### **Operational Planning Update – Envelopment of Baghdad and the Outer Cordon**

In late February, the Division was asked to consider a different role in the Baghdad fight. In this scenario, the Division was to participate in the establishment of an outer cordon around Baghdad instead of a direct assault to secure the city. By the proposed plan, forces from an outer cordon would contain Regime forces within, and conduct lightning strikes into the urban area. The fight for Baghdad would still belong to V Corps, but the Division would isolate the city from the east and north. This would prevent interference with US actions in Baghdad by Iraqi elements outside of the city, and deny the enemy the ability to withdraw from Baghdad to make another last-ditch stand at Tikrit. This scheme ran counter to the Blue Diamond operational vision for the Baghdad fight, which was to continue the attack in an unrelenting series of sustained attacks, rather than a series of raids. Raiding from and returning to a cordon outside the urban area might encourage the enemy by allowing him to remain in control of the field of battle at the end of the action, forcing US forces to repeatedly re-attack over the same ground. Regardless of the urban strategy eventually pursued, plans were made for an initial cordon around the city. Key to establishing this outer cordon was the Division's ability to bypass Baghdad to the east. Weeks prior, the Division had requested an additional MCIA study of routes from Al Kut to Baghdad. Termed the 'Hook Two' study, the routes presented offered some limited opportunities to envelop Baghdad to the east. The planners decided to recommend that one RCT cross over the Diyala River north of the city to put in blocking positions on both Highway 2 and Highway 5, the principle escape routes from Baghdad. Another RCT, attacking along the Highway 6 avenue of approach, would provide uninterrupted pressure on the Baghdad defenses from the south, setting the conditions for the third RCT to attack into the urban area using the friendly corridors along Saddam City. The Division continued to develop this preliminary plan, but waited for higher headquarters to define what role Blue Diamond would have in the Baghdad fight.



## Division Rehearsals – Imaging the Plan

Even before Division forces began to flow into Theater, the Division had embarked on an aggressive plan to rehearse for the coming fight. The CG's intent was to 'image' the Division through the fight in a number of ways. Training events like the pre-deployment briefings had accomplished personal imaging. Intelligence Roadshow briefings had provided operational imaging. An important next step of the process, however, was to image the Division through some of the complex tactical maneuvers that



*The Blue Diamond principal staff members review the details of the plan while still in Camp Commando, Kuwait.*

would be required. Some creative mechanisms were developed. From a detailed terrain model at Twenty-nine Palms to plastic Lego blocks in a Camp Pendleton parking lot; from computer simulation to colored unit T-shirts in a Kuwaiti desert sandtable; the Marines of the Division put their collective focus into preparing for the fight. These rehearsals and combat preparations continued even as forces flowed into theater. In some cases, units had to participate by VTC. With force flow and deployment concerns nearing resolution, the Division refocused on shattering the Iraqi Army's cohesion. With the same momentum they were determined to achieve against the Iraqis, the Division entered their final rehearsal period.



*Imaging the Marines through the first five days of combat was an important component of victory, and one of the CG's personal priorities.*

### **Division Rehearsals – September CPX**

One of the last live-fire training events the Division would have collectively, was a Command Post Exercise (CPX) conducted in Twenty-nine Palms in September 2002. This was a difficult exercise to conduct, as the Division was seemingly overwhelmed by the preparatory requirements associated with deploying the Division to war. In fact, since Seventh Marine Regiment was in the final preparation phase for their upcoming Combined Arms Exercise (CAX) 1 and 2, they were represented by First Tank Battalion in the CPX. This four-day exercise was crucial, however, in finalizing procedures and building confidence in the Blue Diamond team.





*The September 2002 Command Post Exercise was an opportunity for the many new members of the Division and Regimental staffs to exercise Division Command and Control in a live fire environment. Many of the procedures refined here in Twenty-nine Palms would later be used to crush the enemy in Iraq.*





The objectives of the CPX were in line with the planning efforts to date. The G-2 and G-7 produced a fictitious enemy scenario that exactly mirrored the Iraqi threat and some of the challenges the Division's attack would pose. Previous Division exercises had concentrated on integration of fires, maneuver, and intelligence. This CPX added command and control rehearsals to these other tactical tasks. One of the more significant of these objectives was the reconfiguration of the Division CP. Division-level C2 is a difficult thing under the best of circumstances. Now the Division would have to prepare to conduct a rapid attack over multiple corridors at distances exceeding 600 kilometers from their initial LD. Innovative thinking was required to lighten the lift requirement of the Division Forward and Division Main CPs, and to modify the Division Jump CP to meet the expectations of the new CG.

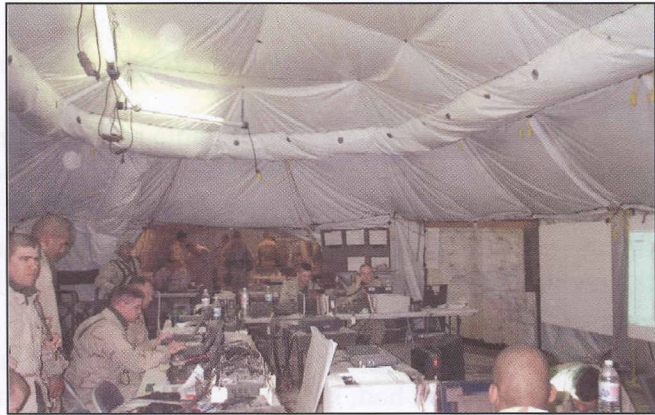


**Marines from Headquarters Battalion rehearse personal and vehicle NBC decontamination procedures as part of the September CPX.**

Colonel Ben Saylor, the Division Chief of Staff, and Master Gunnery Sergeant Bennett Woods, the Division Operations Chief, took the lead in redefining the CPs. Over time, and with the added presence of dozens of liaison officers from a variety of units, these had grown into large beasts, with hundreds of vehicles. The CP, with all its supporting and associated attachments was too cumbersome and too difficult to move quickly and efficiently. Worse than its physical size, however, was a loss of focus on the tactical action at hand. Colonel Saylor believed the CP could be reconfigured in order to restore a 'killing focus' to the actions of the Division Staff. Through hours of drills and rehearsals, he worked mightily to refocus the Division CP on supporting combat operations. He coordinated with the key staff members to establish a Main CP



configuration whose centerpiece was a U-shaped watch floor, oriented on a series of shared situational displays. The term "Killing U" was coined to describe the setup inside the Combat Operations Center, a term that reflected the primacy of shaping the enemy as a mission of the Division staff. The Chief continually stressed that if the Division Staff was doing its job, the RCTs would have a much less costly close fight. Knowing the MEF was focused even further out in the shaping fight, the Division fight knitted the deep and close actions within the MEF to create a single battle.



*The 'Killing U' of the Division COC was formulated and rehearsed during peacetime training events. This repeated training resulted in a smoothly functioning COC in combat only months later.*

The Division CP also began a concerted focus on getting lighter. Every vehicle and function was analyzed to see if it could be shifted to the Division Support Area, or eliminated altogether. The G-6 did yeoman's work defining a communications architecture that would wholly support the Division's movement over vast distances, with widely separated maneuver elements. The passage of control between the Division Main and Forward CPs was practiced repeatedly, as this would be critical in maintaining the momentum of the Division's attack to Baghdad. As a first test of the SMART-T in field operations, the CPX was a success. Reliable data communications were established to regimental level using these new systems, building confidence and demonstrating a reliability and ease of use that would be crucial to combat operations. The exercise reinforced the need to acquire more off-the-shelf communications equipment to supplement the aging 'green gear' the Division currently possessed. The use of secure Iridium phones, for example, was developed and exercised as a backup communications method, and the requirement to purchase many more Iridium satellite telephones was identified.

In the final analysis, the Division and regimental staffs were overwhelmingly positive in their assessment of the time spent during this training. Perhaps most important was the confidence building that began to occur. Coming right after the summer personnel rotation cycle, all of the staffs had new players serving in critical billets. The opportunity for these new members of the Division to gather around the sand table and walk through the operation under the tutelage of the CG was important. The Division used the opportunity to image the assembled staffs through the fight once again, ensuring a solid understanding of what remained to be done. This exercise had also tested of the metal of the Division and regimental staffs, and the CG was pleased with the results. This newly focused team was up to the challenges of enemy and terrain it would face only months later.

## **Division Rehearsals – Division MOUT Seminar**

The Iraqis had made a considerable amount of noise in the press regarding their intent to conduct an urban-centric defense. While it was difficult to separate Iraqi rhetoric from reality, urban combat would certainly be one of the realities of the coming fight. The threatened Iraqi plan was to draw attacking forces into the cities, where they could lessen the technological and fires superiority advantage of the Coalition. The possibility of this course of action had strategic implications as well. Collateral damage, civilian casualties, and the loss of Coalition lives could create negative feelings at home in the US and abroad. The Iraqis had, no doubt, studied the results of the American fight in Somalia, as well as the Russian experience in Chechnya. These recent experiences stood as a reminder that individual Marines, well-trained and well equipped for an urban fight, would make a critical difference to the Division's success on the Iraqi urban battlefield. Accordingly, the Division hosted a Military Operations on Urban Terrain (MOUT) Seminar in December 2002 to consider the implications of the urban fight for the Division and supporting units.

The I MEF plan to bypass urban areas, developed by Lieutenant General Hagee and embraced by Lieutenant General Conway, would help to avoid some of the worst implications of the proposed Iraqi urban-centric defense. Still, fighting in the urban terrain of Baghdad and selected other cities would inevitably occur at some point in the war. Lieutenant Colonel Sean Magee, an enthusiastic reservist recently activated for this fight, worked diligently to set up the Division's MOUT Seminar on short notice. A fine example of Marine Reservists eager to get into the fight, McGee had volunteered for mobilization, and put together a superb seminar. This was an important preparatory event for the Division, and the CG flew back to California from Kuwait to attend. Much of the ambiguity about how the Division would plan to fight in Baghdad was resolved over the three days of the seminar, with nearly all regimental, battalion, and supporting commanders present. The event included the input of subject matter experts from various Marine Corps agencies including the Marine Corps Warfighting Lab (MCWL), Marine Aviation Weapons and Tactics Squadron (MAWTS-1), and MARCORSYSCOM. Attendees included staff members from the Division, 3<sup>d</sup> MAF, and I MEF. RAND corporation advisors also attended. These experts gave the commanders and planners of both the Division and MEF insight into the specific tactics, techniques, and procedures that would allow them to win on the urban battlefield. The assembled Marines discussed the implications associated with MOUT, built on established Marine Corps doctrine, and developed mitigation strategies suited specifically for the urban areas in the Division's AO. Guest speakers, Generals Martin Steele and Norman Smith discussed their combat experiences in Hue City to help focus the commanders and staffs. The contributions of these veteran Marines and their combat insights were enormously helpful in preparing a new generation of Marines for this type of operation.

Immediately following this seminar, the Division's actions to acquire some of the necessary communications equipment for this fight picked up steam. The aging 'green gear' communications equipment the Division possessed was not suitable for modern



urban combat, and the G-6 coordinated with the Warfighting Lab to develop communication alternatives. A major initiative pursued was to provide a more robust communications capability between the armored and infantry units, and one proposed solution was to procure British-made Personal Role Radios (PRRs). These personal communications devices would be used throughout the Division to augment and interface with the Division's tactical radios. Working in conjunction with Mr. Steve Fisher and the Marines of the Marine Corps Warfighting Lab, these radios were procured to augment the Division's communication assets. They would prove very useful for infantry squad support, operations in built up areas, security force operations, and convoy support. Generals Hailston and Conway wholeheartedly supported and resourced this critical buy. The G-6 received and distributed 3,443 radios throughout the Division. These PRRs received the universal acclaim of the Marines who used them.

The MOUT symposium dialogue could only be validated by practice in execution. Earlier training had occurred at the urban complex located at the old Victorville Air Base in Southern California. Two of the Division's maneuver battalions had put their Marines through the rigors of urban combat at this facility. This training, dubbed the Urban Combined Arms Exercise (UCAX), was highly effective, and much praised by the battalions who had the opportunity to attend. Major Mike Samarov, the Operations Officer from 3<sup>d</sup> Battalion, 7<sup>th</sup> Marines (in the vernacular of the day) described it, "UCAX is Money! Every scenario we trained to in Victorville, we ran into during combat operations." This theme was repeated by members of the Division who had participated or observed the training. Participants described the skepticism they originally had when faced with some of the scenarios presented in the UCAX. Militias competing for power on the streets, breakdown of civilian authority, unruly crowds at food distribution centers, car bombs, and snipers hiding in crowds were among many of the 'questionable' scenarios that were found later to directly mirror situations the Marines were faced with on the ground in Baghdad. The Division set out to provide this opportunity to all its maneuver battalions, and established a unit rotation. After sending through one additional battalion (2<sup>d</sup> Battalion, 5<sup>th</sup> Marines), the deployment order came and units began to head to Kuwait. Although the training evolution was cut short, those who participated in the UCAX generally felt that this was the best training they could have received for this fight.

### **Division Rehearsals - The Lego Drills**

While the Division Forward CP made its way to Commando Camp in November, planning efforts continued in CONUS to ready the rest of the Division for deployment. The remaining G-3 staff members led by the Deputy G-3, Lieutenant Colonel Clarke Lethin, began to formulate the plan for the first tactical movement exercise that would affectionately become known as the 'Lego Drill'.

The tactical ground movement required during the coming fight presented a particular challenge to the Division. The restrictive terrain would limit travel to existing roads for much of the battlespace. Self-induced 'friction' caused just by moving the Division's over 5000 vehicles and more than 20,000 personnel over the restricted avenues of

approach would be severe. Enemy actions could only make the situation worse. Since reliefs-in-place or convoy reconfiguration on the fly would induce even more friction, they would be nearly impossible. Careful attention had to be paid to organization for combat, convoy configuration, and battlefield circulation planning. If something was likely to be required at the point of attack, its place in the convoys would have to be established early on so it would be able to be employed forward rapidly. Engineering assets, NBC decontamination equipment, communications gear, artillery, and logistics support (to name only a few) all jockeyed for position in the column. The potential for traffic jams to seriously impact the Division's tempo, and to put lives at risk at bottled-up chokepoints, made rehearsals necessary. Doing these on a scale that would allow the Division to visualize the challenges was problematic.

The CG presented the staff with an idea to help the Division image its way through this challenge. Inspired by a local southern California attraction, the CG decided using toy Lego blocks to represent every vehicle in the Division would be a fine way to visualize the maneuver challenges. Using these plastic blocks on an appropriately scaled terrain model would give an appreciation to all the commanders of the challenges posed by moving massive numbers of vehicles down the limited roads available. Legos were available in a variety of sizes, and were color coded as well. Specific colors and sizes would be assigned to a unit's vehicles, then the blocks would be attached to corresponding plates that would represent each of the units of the Division. A scaled terrain model was built to replicate the major terrain features in southern Iraq to include the enemy order of battle, avenues of approach, objectives, and existing control measures. For the drill, each battalion walked through its scheme of maneuver, moving their Lego pieces in the proper sequence, limited by traffic flow and movement rates dictated by conditions. This allowed the staff, commanders, and operations officers to image through the sequence of movement for the Division and its supporting units, gain understanding of the battlespace, and provide a forum to validate the current task organization. It also identified potential friction points, and helped establish priorities of movement according to the desired sequence of each RCT. The drill also helped forecast when the Division would be ready to assume battlespace from the RCTs, and turn it over to a relieving force.

Heading the 'toy' department were Lieutenant Colonel Rob Whitters and Lieutenant Colonel Steve Santa Ana, who bought over 6,000 Lego blocks to depict most of the Division's vehicle pool, and those of supporting attachments. The G-3 and G-4 began to supervise the task of assembling the entire Divisional task organization, one vehicle at a time. Putting an entire Division together in this manner presented the opportunity for each RCT to gain in-depth understanding of the size and composition of their planned attachments, supporting units, and other forces on the battlefield. The RCTs gained a collective understanding of just how massive a full Marine Division was, and how drawn out the convoys would be over the limited road network through the muddy terrain of southern Iraq. This drill foreshadowed the complexity of the challenges posed by the Division's plan to run up an unexpected avenue of approach over terrain that even the enemy questioned for trafficability. The Lego Drill also cemented the tactical belief that forward passages of lines must be avoided at almost any cost in order to maintain tempo.



The first Lego Drill took place on 5 December 2002 in front of the Division CP. The palm-shaded parade deck in front of the 'White House' offered the perfect setting for the 1<sup>st</sup> Marine Division to rehearse yet another action against the Nation's foes, even if the security issues posed by the outdoor setting were difficult to deconflict. Accomplishing meaningful training while also practicing good Operational Security (OPSEC) were difficult missions to reconcile throughout the preparation and rehearsal phases. The G-2 constructed a scaled terrain model of southern Iraq using athletic field chalk, and commanders at all levels attended. The drill was successful in depicting the challenges the Division faced, and graphically demonstrated some of the particular choke points that would slow the Division's rapid advance. Questions on battlespace management were discussed and answered. For each traffic jam of plastic blocks, the training audience was forced to ask itself, "Who owns the battlespace? Where exactly are the boundaries? Who will act as the referee when fog and friction came into play?" The team-generated answers to these questions were to greatly facilitate the Division's movement when it executed this same plan with real M1A1s, AAVs, and MTRVs (7-ton trucks.)

A second Lego Drill was held on 10 January at Camp Pendleton's LZ Horno. The audience, much larger this time, included key personnel from the Division, its supporting units, and higher headquarters. By this time, the plan had gone through several refinements in Kuwait. The CG again flew back from the Forward CP in Kuwait to attend this important training event, and took Lieutenant Colonel Paul 'Uriah' Kennedy, the lead planner, with him. Together, they talked the audience through the most recent changes to the operational plan. The battlespace, task organization, and sequencing of the Opening Gambit had all been recently defined by the planning staffs in Kuwait, and were now briefed to the Division and regimental staffs at large. RCT commanders back-briefed the CG on their understanding of the scheme of maneuver. This second drill allowed for a common understanding of all the refinements that had taken place up to that point, and allowed members of supporting and adjacent staffs to visualize their own role in the coming fight.

These drills shaped the actions that would take place on the ground in Iraq in a few short months. For example, as the collective members of the MAGTF team talked through the sequence and the integration of assault support, Lieutenant Colonel Bradley Lowe, the Marine Aircraft Group-39 (MAG-39) Operations Officer, brought up the fact that the AH-1's were oriented to the east in their support of RCT-7's attack on the 51<sup>st</sup> Mechanized Division (should it hold out longer than anticipated and was still fighting at dawn.) This presented a particular challenge, as the pilots would be attacking into the morning sun. The Division's plan was changed accordingly, with the addition of a 3<sup>d</sup> LAR supporting attack from the southeast to open a corridor for the Cobras, allowing them to orient to the northwest, mitigating the blinding effects of the sun.

Although of great value, the scale of the Lego Drill was very small, making it difficult for spectators to identify the players. For detailed attack planning, the scale was appropriate. For visualizing the operation as a whole, however, it was confusing for the spectators once the players began to move their tiny pieces on the vast terrain model. In

order to keep track of the different players there was a need to personalize each 'team' on the field. Captain Warren Cook, the CG's aide, came up with an idea to use color and number coded jerseys to represent the elements of each RCT. Each RCT 'team' would take to the field with its own color, and subordinate battalions would wear the number that corresponded to their battalion identifier (e.g. 3<sup>d</sup> Battalion, 5<sup>th</sup> Marines would wear RCT-5's color with the number 35.) A similar scheme was established for independent battalions and supporting elements. (Captain Cook would have a number of brilliant suggestions throughout planning and combat operations that would have a significant influence on the Division's success. Much more than an aide, he was a trusted advisor for the CG and members of the Staff.) The Division Staff hurriedly purchased colored T-shirts, and Lieutenant Colonel Lethin hand-carried them all the way to the Forward CP in Kuwait. The first 'Jersey Drill' would take place in LSA-Matilda during February.

### **NBC Rehearsals – This is for the Birds**

Back in Kuwait, as part of the NBC rehearsal plan, every Marine and Sailor in the Division attended a mandatory Mission Oriented Protective Posture (MOPP) gear exchange and refresher NBC classes. These classes included instructions on the use of NBC detection equipment, types of agents, and instructions for establishing a decontamination site. This training took on a special seriousness with the Marines of the Division given the current intelligence assessments that assumed a chemical attack. Members of the Division paid close attention to this training, which 'demystified' the whole NBC environment. For perhaps the first time in Marine Corps history, Marines eagerly stood in line for a mandatory training event. The Marines of the Division fully expected to have to operate in a chemical environment, and were determined not to let it slow them down.

One risk the Division prepared for was the effect of petroleum-based vapors on the detection systems used by the Marine Corps. Although these systems provided accurate and timely agent confirmation, they also often gave false positive readings when in contact with certain vapors and liquids associated with petroleum products. Contact with petroleum products was a defining feature of the Division's battlespace, and this limitation was significant. Any false reading required forces to increase their MOPP level, pulling on masks and gloves that degraded the performance of the Marines. The Division needed a redundant, reliable chemical detection system that would mitigate false cueing, and give greater confidence to Marines standing down from a heightened alert posture.

The task of finding a solution for this deficiency fell on Chief Warrant Officer Stacy Jeambert, the Division NBC officer. A creative NBC professional, he decided that the assistance of an additional species was required for this weighty responsibility, and advocated the use of a 'Sentinel Species'. Like a canary in a coalmine, a living, breathing creature could be used to provide early indications of NBC agents in the air, even in a petroleum-contaminated environment. The Division expanded into the poultry business and purchased 200 chickens to aid in its NBC detection capability. This



Sentinel Species would likely show symptoms of chemical agents well before detection kits identified the threat.

The integration of these new 'marines' into the Division was difficult. Several of the birds disappeared immediately, followed by suspicious cooking fires in hidden corners of the camp. Others made their escape from the hands of inexperienced chicken wranglers and 'deserted' into the desert. Most, however, died before they got to see any combat action due to the extreme climatic conditions. Apparently, the birds sold to the Marines by an enterprising young Kuwaiti were civilized laying hens and not 'yard birds'. When exposed to the daily living conditions of the Marines, these civilized animals quickly broke down and died.



*NBC Pigeons proved to be a 'Sentimental Species' that could survive the tough living conditions of the Marines.*

Tikrit before he was relieved of his duties and mustered out of the service. The Sentinel Species concept was validated, and instilled additional confidence in the Marines' ability to operate in a contaminated environment. The skepticism and humor with which this employment was met also provided valuable comic relief at a time of heightened tension. A sense of humor was a critical aspect of courage as the Marines prepared to attack into the unknown.

In the event that units did come under chemical attack, they would conduct self-decontamination to the extent possible. If supporting assistance was required, the task would fall to the Operational Decontamination Unit, task organized under Lieutenant Colonel Rob Abbott's 3<sup>d</sup> AA Battalion. In addition to the Division's organic NBC decontamination assets, 3<sup>d</sup> AA Battalion had received the 101<sup>st</sup> Chemical Company (-) from the US Army.

The Division's next biological experiment was with a more robust and hardy species, the homing pigeon. These birds were fielded to the RCTs and separate battalions to reinforce their organic detection capabilities. The survival rate of these birds was much higher because they were used to living in the desert heat (and they had much less meat.) The Marines even took to naming the birds. 'Pidgeodo', under the watchful care of Corporal Joshua Hardy from Headquarters Battalion, even made it all the way to Saddam's palace in



*'Pideodo', an NBC Pigeon cared for by Corporal Joshua Hardy, survived all the way to Tikrit before being mustered out of the service.*